

Appl. No.: 10/823,331
Amdt. Dated: March 7, 2007
Reply to Office Action of: February 26, 2007

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. – 10. (Canceled)

11. (Previously Presented) A method for manufacturing a hermetically sealed glass package, said method comprising the steps of:

providing a first glass plate;

providing a second glass plate;

depositing a frit made from glass doped with at least one transition metal and a coefficient of thermal expansion (CTE) lowering filler onto said second glass plate; and

heating said frit with an irradiation source in a manner that would cause said frit to soften and form a hermetic seal which connects said first glass plate to said second glass plate.

12. (Original) The method of Claim 11, further comprising the step of placing an adhesive within a gap located between outer edges of said first and second glass plates, wherein said gap is caused by the presence of the hermetic seal.

13. (Original) The method of Claim 11, further comprising the step of pre-sintering said frit to said second glass plate before said heating step.

14. (Currently Amended) The method of Claim 11, wherein said irradiation source is a heating step further includes using a laser to emit a laser beam that heats said frit.

15. (Original) The method of Claim 14, wherein said frit has an enhanced absorption property within an infrared region and said laser beam has a wavelength in the infrared region such that when said laser beam interacts with said frit substantially more heat

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energy is absorbed by said frit from said laser beam when compared to the heat energy absorbed by each of said first and second glass plates.

16. (Original) The method of Claim 11, wherein said heating step further includes using an infrared lamp to emit a light that heats said frit.

17. (Previously Presented) The method of Claim 16, wherein said frit has an enhanced absorption property within an infrared region and said light has a wavelength in the infrared region such that when said light interacts with said frit substantially more heat energy is absorbed by said frit from said light when compared to the heat energy absorbed by each of said first and second glass plates.

18. (Original) The method of Claim 11, wherein said frit has a softening temperature that is lower than softening temperatures of said first and second glass plates.

19. (Original) The method of Claim 11, wherein said frit has a CTE that substantially matches the CTEs of said first and second glass plates.

20. (Previously Presented) The method of Claim 11, wherein said CTE lowering filler is an inversion filler.

21. (Previously Presented) The method of Claim 11, wherein said CTE lowering filler is an additive filler including lithium alumino-silicate compounds.

22. (Original) The method of Claim 11, wherein said frit is a low temperature glass frit containing one or more absorbing ions chosen from the group including iron, copper, vanadium, and neodymium.

23. (Original) The method of Claim 11, wherein said frit excluding the CTE lowering filler has the following composition:

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K₂O (0-10 mole %)
Fe₂O₃ (0-20 mole %)
Sb₂O₃ (0-40 mole %)
P₂O₅ (20-40 mole %)
V₂O₅ (30-60 mole %)
TiO₂ (0-20 mole %)
Al₂O₃ (0-5 mole %)
B₂O₃ (0-5 mole %)
WO₃ (0-5 mole %)
Bi₂O₃ (0-5 mole %).

24. (Original) The method of Claim 11, wherein said frit excluding the CTE lowering filler has the following composition:

K₂O (0-10 mole %)
Fe₂O₃ (0-20 mole %)
Sb₂O₃ (0-20 mole %)
ZnO (0-20 mole %)
P₂O₅ (20-40 mole %)
V₂O₅ (30-60 mole %)
TiO₂ (0-20 mole %)
Al₂O₃ (0-5 mole %)
B₂O₃ (0-5 mole %)
WO₃ (0-5 mole %)
Bi₂O₃ (0-5 mole %).

25. (Previously Presented) The method of Claim 11, wherein said frit is selected from the group of glasses consisting of a titano-vanadium glass, an iron-vanadium glass, a zinc-vanadium glass, a Sn-Zn-phosphate glass, a mixed alkali zinc-phosphate glass, a vanadium-phosphate glass, a Pb-borate glass, and a mixed alkali zinc-phosphate glass with vanadium and lead.

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26. -- 36. Canceled

37. (Previously Presented) A method for manufacturing an organic light emitting diode device, said method comprising the steps of:

providing a first substrate plate;

providing a second substrate plate;

depositing a frit made from glass doped with at least one transition metal and a coefficient of thermal expansion (CTE) lowering filler onto one of said substrate plates; and

depositing at least one organic light emitting diode onto one of said substrate plates; and

heating said frit with an irradiation source and then cooling said frit in a manner that would cause said frit to melt and form a hermetic seal which connects said first substrate plate to said second substrate plate and also protects said at least one organic light emitting diode.

38. (Original) The method of Claim 37, further comprising the step of placing an adhesive within a gap located between outer edges of said first and second substrate plates, wherein said gap is caused by the presence of the hermetic seal.

39. (Original) The method of Claim 37, further comprising the step of pre-sintering said frit to said one of the substrate plates before said heating step.

40. (Original) The method of Claim 37, wherein said heating step is performed at a temperature which causes said frit to melt and form the hermetic seal while at the same time avoiding damage to said at least one organic light emitting diode.

41. (Original) The method of Claim 37, wherein said heating step further includes using a laser to emit a laser beam that heats said frit.

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42. (Original) The method of Claim 41, wherein said frit has an enhanced absorption property within an infrared region and said laser beam has a wavelength in the infrared region such that when said laser beam interacts with said frit substantially more heat energy is absorbed by said frit from said laser beam when compared to the heat energy absorbed by each of said first and second substrate plates.

43. (Original) The method of Claim 37, wherein said heating step further includes using an infrared lamp to emit a light that heats said frit.

44. (Previously Presented) The method of Claim 43, wherein said frit has an enhanced absorption property within an infrared region and said light has a wavelength in the infrared region such that when said light interacts with said frit substantially more heat energy is absorbed by said frit from said light when compared to the heat energy absorbed by each of said first and second substrate plates.

45. (Original) The method of Claim 37, wherein said frit has a softening temperature that is lower than softening temperatures of said first and second substrate plates.

46. (Original) The method of Claim 37, wherein said frit has a CTE that substantially matches the CTEs of said first and second substrate plates.

47. (Previously Presented) The method of Claim 37, wherein said CTE lowering filler is an inversion filler or an additive filler.

48. (Original) The method of Claim 37, wherein said frit is a low temperature glass frit containing one or more absorbing ions chosen from the group including iron, copper, vanadium, and neodymium.

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49. (Original) The method of Claim 37, wherein said frit excluding the CTE lowering filler has the following composition:

K_2O (0-10 mole %)
 Fe_2O_3 (0-20 mole %)
 Sb_2O_3 (0-40 mole %)
 P_2O_5 (20-40 mole %)
 V_2O_5 (30-60 mole %)
 TiO_2 (0-20 mole %)
 Al_2O_3 (0-5 mole %)
 B_2O_3 (0-5 mole %)
 WO_3 (0-5 mole %)
 Bi_2O_3 (0-5 mole %).

50. (Previously Presented) The method of Claim 37, wherein said frit is selected from the group of glasses consisting of a titano-vanadium glass, an iron-vanadium glass, a zinc-vanadium glass, a Sn-Zn-phosphate glass, a mixed alkali zinc-phosphate glass, a vanadium-phosphate glass, a Pb-borate glass, and a mixed alkali zinc-phosphate glass with vanadium and lead.

51. - 67. Canceled